Arkansas Department of Career Education
Model Framework

Course Title: **Carpentry**

Career Cluster: **Architecture & Construction**

Secondary – Skilled and Technical Sciences		
Course Number	494460	
CIP Number	46.0201	
Grade Level	9-12	
Prerequisite	None	
Course Type	Core	
Teacher Certification	570	
CTSO	SKILLS	SKILLS
Facility Requirements	http://arkansasfacilities.arkansas.gov/facilities/academic-facilities-manual	
Industry Certifications	http://www.nccer.org	

Course Description

This instructional program prepares individuals to apply technical knowledge and skills to layout, fabricate, erect, install, and repair wooden structures and fixtures, using hand and power tools.

Program Purpose/Structure

This course is based on the NCCER Carpentry Fundamentals 1 Curriculum.

Laboratory Activities
Click here to enter text.

Special Notes
Click here to enter text.

Career and Technical Student Organization (CTSO)
SkillsUSA

Arkansas Department of Career Education
Student Performance Standards

Course Title: **Carpentry**
Course Number: **494460**
Course Credit: **1**

Carpentry Indicators: At the completion of the course the student will be able to . .

1.0 Demonstrate appropriate safety procedures in a construction lab
- 1.1 Follow safe work practices and procedures in accordance with OSHA standards
- 1.2 Recognize hazards and follow safety procedures required for materials handling

2.0 Demonstrate knowledge of building materials, fasteners, adhesives, and tools
- 2.1 Recognize building materials used in construction and be able to describe the various fasteners and adhesives in construction
- 2.2 Demonstrate safe and proper use of hand and power tools

3.0 Demonstrate knowledge and use of plans, elevations, and floor systems
- 3.1 Demonstrate the techniques for reading and using blueprints and specifications
- 3.2 Demonstrate framing basics and procedures for laying out and constructing a floor system

4.0 Demonstrate knowledge and use of construction framing
- 4.1 Demonstrate the procedures for laying out and framing walls and ceilings
- 4.2 Demonstrate the various types of roof framing

5.0 Demonstrate knowledge and use of concrete and reinforcing materials and stair layout
- 5.1 Investigate the various types of concrete and reinforcing materials
- 5.2 Examine the various types of stairs and building codes related to stairs

6.0 Demonstrate knowledge of types and the installation of windows and doors
- 6.1 Recognize the various types and demonstrate installation procedures for windows, skylights, and exterior doors

Standard 1.0 Demonstrate appropriate Safety Procedures in a Construction Lab			
Performance Indicator 1.1 Follow safe work practices and procedures in accordance with OSHA standards.	**Recommended Application/Activity Reference NCCER 00101-09**	**CCSS Standards**	**CCTC Standards**
1.1.1 Explain the idea of a safety culture and its importance in the construction crafts Explain the role of OSHA in job-site safety. Explain OSHA's General Duty Clause and 1926 CFR Subpart C.	• Demonstrate, Define, and identify the safety culture in the construction craft. Students write an essay on the importance of job safety in the construction craft field, including subpart C.	W11-12.3	AC3
1.1.2 Identify causes of accidents and the impact of accident costs. Recognize hazard recognition and risk assessment techniques.	• Expose students to visual safety programs. Have students inspect worksite/shop to find safety hazards. Have students create a plan to correct the hazard	R11-12.3	AC3
1.1.3 Explain fall protection, ladder, stair and scaffold procedures and requirements.	• Engaging students with visual learning activity. • Set up an extension ladder properly • Demonstrate three-point contact on a ladder • Students need to erect and dismantle scaffolding	R11-12.1	AC3
1.1.4 Identify struck-by hazards and demonstrate safe working procedures and requirements. Identify caught-in-between hazards and demonstrate safe working procedures and requirements.	• Engaging students with visual learning activity • Students research an accident caused by struck-by or caught-in-between hazards and present to class.		AC3
1.1.5 Define safe work procedures to use around electrical hazards.	• Define the difference between barrier and barricade • Demonstrate how to properly use lock-out, tag-out		AC3
1.1.6 Demonstrate the use and care of appropriate personal protective equipment (PPE).	• Properly don and remove PPE • Proper maintenance "safety goggles, hard hat, and personal fall protection"	SL11-12.1b	AC3
1.1.7 Explain the importance of hazard communications (HazCom) and Safety Data Sheets (SDSs).	• Match SDS sheets to products in the shop area • Write a SDS sheet for a chemical	R11-12.1	AC3
1.1.8 Identify other construction hazards on your job site, including hazardous material exposures,	• Create and complete a checklist of all hazards on the job site/shop • Describe fire preventing and firefighting techniques • Demonstrate use of fire extinguisher	W11-12.3	AC3

environmental elements, welding and cutting hazards, confined spaces, and fires.			
Performance Indicator 1.2 Recognize hazards and follow safety procedures required for materials handling.	**Recommended Application/Activity Reference NCCER 00109-09**	**CCSS Standards**	**CCTC Standards**
1.2.1 Define a load. Establish a pre-task plan prior to moving a load.	• Verify a shipment off invoice • Create a staging area for material • Discuss how to purchase material, transport it, and unload material	SL11-12.1b	AC1
1.2.2 Use proper materials-handling techniques.	• Demonstrate Proper lifting procedures • Proper equipment used • Proper storage and stacking of materials	Click here to enter text.	AC1

Standard 2.0 Demonstrate knowledge of Building Materials, Fastener, Adhesives, and Tools			
Performance Indicator 2.1 Recognize building materials used in construction and be able to describe the various fasteners and adhesives in construction.	**Recommended Application/Activity Reference NCCER 27102-06**	**CCSS Standards**	**CCTC Standards**
2.1.1 Investigate various types of building materials and their uses.	• Identify and label different types of building material • Build material displays	R11-12.10	AC1
2.1.2 Investigate the different grades and markings of wood building materials.	• Identify and explain the uses for different types of building material • Build material displays	L11-12.4	AC1
2.1.3 State the uses of various types of hardwoods and softwoods.	• Using displays students will identify and state the uses of various hardwoods and softwoods • Build projects with different types of hardwoods and softwoods	Click here to enter text.	AC1 AC6 AC2
2.1.4 Identify the safety precautions associated with building materials. Describe the proper method of storing and handling building materials.	• Demonstrate Proper lifting procedures • Proper equipment used • Proper storage and stacking of materials	R11-12.10	AC1
2.1.5 Examine the uses of various types of engineered lumber.	• Identify and explain the uses of types of engineered lumber • Calculate the size of material by using a span and load chart	R11-12.10	AC1
2.1.6 Calculate the quantities of lumber and wood products using industry-standard methods.	• Calculate wood products by using linear footage and square footage calculations • Estimate material for a project	L11-12.4	AC1 AC6 AC2
2.1.7 Investigate the fasteners, anchors, and adhesives used in construction work and explain their uses.	• Identify and explain the uses for types of fasteners, anchors, and adhesives • Use different fasteners, anchors, and adhesives	Click here to enter text.	AC1
Performance Indicator 2.2	**Recommended Application/Activity**	**CCSS**	**CCTC**

Demonstrate safe and proper use of hand and power tools.	Reference NCCER 27103-06	Standards	Standards
2.2.1 Examine the hand tools commonly used by carpenters and describe their uses. Use hand tools in a safe and appropriate manner.	• Identify various hand tools and their uses • Build a project using hand tools in a safe and appropriate manner	R11-12.10	AC1
2.2.2 State the general safety rules for operating and maintaining all power tools, regardless of type. Use portable power tools in a safe and appropriate manner.	• Demonstrate proper use of power tools • Demonstrate ability to use power tools safely • Demonstrate proper storage and maintenance of power tools	R11-12.10	AC1
2.2.3 Examine the portable power tools commonly used by carpenters and describe their uses.	• Identify portable power tools and their uses • Define terms on power tools • Demonstrate the ability to use power tools properly	L11-12.4	AC1

Standard 3.0 Demonstrate knowledge and use of Plans, Elevations, and Floor Systems			
Performance Indicator 3.1 Demonstrate the techniques for reading and using blueprints and specifications.	**Recommended Application/Activity Reference NCCER 27104-06**	**CCSS Standards**	**CCTC Standards**
3.1.1 Examine the types of drawings usually included in a set of plans and list the information found on each type.	• Identify types of drawings used in construction • Draft a drawing of a project using scale and architectural symbols	Click here to enter text.	AC1 AC6 AC2
3.1.2 Examine the different types of lines used on construction drawings. Investigate selected architectural symbols commonly used to represent materials on plans.	• Identify and label types of lines used in construction drawings • Define terms • Draft a drawing of a project using scale and architectural symbols	L11-12.4	AC1 AC6 AC2
3.1.3 Examine selected electrical, mechanical, and plumbing symbols commonly used on plans.	• Identify and label electrical, mechanical, and plumbing symbols used in construction plans • Define terms • Draft a drawing of a project using scale and architectural symbols	L11-12.4	AC1 AC6
3.1.4 Investigate selected abbreviations commonly used on plans.	• Identify and explain abbreviations used in plans • Define Terms	L11-12.4	AC1
3.1.5 Read and interpret plans, elevations, schedules, sections, and details contained in basic construction	• Demonstrate the ability to read and interpret plans through question and answering techniques • Define Terms	L11-12.4	AC1
3.1.6 Discuss the purpose of written specifications. Identify and describe the parts of a specification.	• Examine parts of a specification • Locate specific elements within the plans	R11-12.10	AC1
3.1.7 Demonstrate or describe how to perform a quantity takeoff for materials.	• Describe quantity takeoff is performed • Demonstrate quantity takeoff	R11-12.10	AC1
Performance Indicator 3.2 Demonstrate framing basics and procedures for laying out and constructing a floor system.	**Recommended Application/Activity Reference NCCER 27105-06**	**CCSS Standards**	**CCTC Standards**
3.2.1 Examine the different types of	• Identify and explain types of framing systems	Click here to	AC1

framing systems.	• Field trips to construction projects	enter text.	
3.2.2 Read and interpret drawings and specifications to determine floor system requirements. Given specific floor load and span data, select the proper girder/beam size from a list of available girders Given specific floor load and span data, select the proper joist size from a list of available joists.	• Using a blueprint of a project, calculate the loads and span of the floor system using the load and span chart then select the proper material size to use on a project, determined by the load and span chart	L11-12.4	AC1 AC6 AC2
3.2.3 Examine floor and sill framing and support members. Name the methods used to fasten sills to the foundation.	• Identify and discuss floor and sill framing and support members • Define Terms • Design a material list of proper material to use for sills and support members	L11-12.4	AC1 AC6 AC2
3.2.4 Investigate different types of floor joists.	• Identify different types of floor joists and explain their purposes • Define Terms	L11-12.4	AC1
3.2.5 Investigate different types of bridging.	• Identify different types of bridging and their purposes • Define Terms	L11-12.4	AC1
3.2.6 Recognize different types of flooring materials.	• Identify different types of flooring materials and explain their uses • Introduce students to different types of flooring • Compare and contrast the different flooring uses	R11-12.10	AC1
3.2.7 Explain the purposes of subflooring and underlayment.	• Introduce students to different types of subflooring and underlayment • Compare and Contrast the different subflooring and underlayment material	R11-12.10	AC1
3.2.8 Match selected fasteners used in floor framing to their correct uses.	• Introduce students to different types of fasteners used in floor framing • Compare and Contrast the different fasteners and their uses	L11-12.4	AC1
3.2.9 Estimate the amount of material needed to frame a floor assembly	• Complete a takeoff of material • Calculate the number of boards and sheets for a project	Click here to enter text.	AC1

3.2.10 Demonstrate the ability to: • Lay out and construct a floor assembly • Install bridging • Install joists for a cantilever floor • Install a subfloor using butt-joint plywood/OSB panels • Install a single floor system using tongue-and-groove plywood/OSB panels	• Build a project (house, shed, playhouse, etc.) • Layout corners using 3-4-5 method or Pythagorean theory	L11-12.4	AC1 AC6 AC2

Standard 4.0 Demonstrate knowledge and use of Construction Framing			
Performance Indicator 4.1 **Demonstrate the procedures for laying out and framing walls and ceilings.**	**Recommended Application/Activity Reference NCCER 27106-06**	**CCSS Standards**	**CCTC Standards**
4.1.1 Identify the components of a wall and ceiling layout.	• Recognize components of wall and ceiling layouts • Define Terms	L11-12.4	AC1
4.1.2 Describe the procedure for laying out a wood frame wall, including plates, corner posts, door and window openings, partition Ts, bracing, and fire stops. Describe the correct procedure for assembling and erecting an exterior wall.	• Build a project (house, shed, playhouse, etc.) Students layout corners using 3-4-5 method or Pythagorean theory	L11-12.4	AC1
4.1.3 Identify the common materials and methods used for installing sheathing on walls.	• Introduce students to different types of sheathing and its uses. • Recognize common materials for installing sheathing on walls	L11-12.4	AC1
4.1.4 Layout, assemble, erect, and brace exterior walls for a frame building.	• Build a project (house, shed, playhouse, etc.) • Demonstrate proper procedures for lay out and assemble for wall framing	R11-12.10	AC1 AC6 AC2
4.1.5 Describe wall framing techniques used in masonry construction.	• Identify the different types of bonds and patterns	L11-12.4	AC1
4.1.6 Explain the use of metal studs in wall framing.	• Compare and Contrast metal studs vs. wood studs • Describe the assembly of metal studs	R11-12.10	AC1
4.1.7 Describe the correct procedure for laying out ceiling joists.	• • Compare and Contrast the differences of layout dimensions • • Demonstrate proper layout procedures to include starting points and spacing	R11-12.10	AC1 AC6
4.1.8 Cut and install ceiling joists on a wood frame building.	• Build a project (house, shed, playhouse, etc.) • Demonstrate proper cutting procedures		AC1 AC6 AC2
4.1.9 Estimate the materials required	• Do a take off for a building project.	Click here to	AC1

to frame walls and ceilings.	• Calculate materials by using linear footage and square footage calculations	enter text.	
Performance Indicator 4.2 Demonstrate the various types of roof framing.	**Recommended Application/Activity Reference NCCER 27107-06**	**CCSS Standards**	**CCTC Standards**
4.2.1 Understand the terms associated with roof framing.	• Define terms associated with roof framing	R11-12.10	AC1
4.2.2 Identify the roof framing members used in gable and hip roofs.	• Recognize and label roof framing members	R11-12.10	AC1
4.2.3 Identify the methods used to calculate the length of a rafter.	• Demonstrate the mathematical calculations • Demonstrate using a framing square by the step off method • Demonstrate using a speed square with the chart	R11-12.10	AC1
4.2.4 Identify the various types of trusses used in roof framing.	• List and label various types of trusses	R11-12.10	AC1
4.2.5 Use a rafter framing square, speed square, and calculator in laying out a roof.	• Demonstrate the mathematical calculations • Demonstrate using a framing square by the step off method • Demonstrate using a speed square with the chart	L11-12.4	AC1
4.2.6 Identify various types of sheathing used in roof construction.	• Recognize and label various types of sheathing	L11-12.4	AC1
4.2.7 Frame a gable roof with vent openings Frame a roof opening.	• Build a roof system with openings	L11-12.4	AC1
4.2.8 Erect a gable roof using trusses.	• Build a project using a gable roof system • Compare and Contrast gable roof system vs. hip roof system	L11-12.4	AC1 AC6 AC2
4.2.9 Estimate the materials used in framing and sheathing a roof.	• Calculate material for framing and sheathing a roof • Determine the correct material for the application	L11-12.4	AC1 AC6 AC2

Standard 5.0 Demonstrate knowledge and use of Concrete and Reinforcing Materials and stair layout.			
Performance Indicator 5.1 Investigate the various types of concrete and reinforcing materials.	**Recommended Application/Activity Reference NCCER 27108-06**	**CCSS Standards**	**CCTC Standards**
5.1.1 Identify the properties of cement.	• Explain the properties of cement	L11-12.4	AC1
5.1.2 Describe the composition of concrete.	• Define and identify the mixtures of concrete	L11-12.4	AC1
5.1.3 Perform volume estimates for concrete quantity requirements.	• Build a volume box	Click here to enter text.	AC1
5.1.4 Identify types of concrete reinforcement materials and describe their uses.	• Recognize types of concrete reinforcement materials • Compare and contract types of concrete reinforcement materials	L11-12.4	AC1
5.1.5 Identify various types of footings and explain their uses.	• Compare and Contrast various types of footings	R11-12.10	AC1
5.1.6 Identify the parts of various types of forms.	• Compare and Contrast various types of forms	R11-12.10	AC1
5.1.7 Explain the safety procedures associated with the construction and use of concrete forms.	• Instruct students on general safety procedures for constructing concrete forms • Examine Safety Devices	L11-12.4	AC1
5.1.8 Erect, plumb, and brace a simple concrete form with reinforcement.	• Build a concrete form with reinforcement	Click here to enter text.	AC1 AC6 AC2
Performance Indicator 5.2 Examine the various types of stairs and building codes related to stairs.	**Recommended Application/Activity Reference NCCER 27110-06**	**CCSS Standards**	**CCTC Standards**
5.2.1 Identify the various types of stairs.	• Compare and Contrast differences in stairs	R11-12.10	AC1
5.2.2 Identify the various parts of stairs.	• Recognize and label the various parts of stairs	L11-12.4	AC1
5.2.3 Identify the materials used in the construction of stairs.	• Describe materials used to build stairs • Compare and Contrast materials used in stairs	L11-12.4	AC1
5.2.4 Interpret construction drawings of stairs.	• Determine the location and type of stairs, using a blueprint drawing	SL11-12.5	AC1

5.2.5 Calculate the total rise, number and size of risers, and number and size of treads required for a stairway	• Explain stair calculations • Use Jeopardy, other game questioning techniques	SL11-12.5	AC1
5.2.6 Lay out and cut stringers, risers, and treads. Build a small stair unit with a temporary handrail.	• Demonstrate proper technique for constructing stairs • Construct a set of stairs	Click here to enter text.	AC1 AC6 AC2

Standard 6.0 Demonstrate knowledge of types and the installation of windows and doors.			
Performance Indicator 6.1 Recognize the various types and demonstrate installation procedures for windows, skylights, and exterior doors.	**Recommended Application/Activity Reference NCCER 27109-06**	**CCSS Standards**	**CCTC Standards**
6.1.1 Identify various types of fixed, sliding, and swinging windows.	• Label various parts of windows	L11-12.4	AC1
6.1.2 Identify the parts of a window installation.	• Demonstrate or recall of the installation of window parts	SL11-12.5	AC1
6.1.3 State the requirements for a proper window installation.	• Research and present a report of proper window installation	L11-12.4 SL11-12.5	AC1
6.1.4 Install a pre-hung window.	• Install a pre hung window	Click here to enter text.	AC1
6.1.5 Identify the common types of exterior doors and explain how they are constructed.	• Describe the various materials that exterior doors are made from and how they are constructed	SL11-12.5	AC1
6.1.6 Identify the parts of a door installation.	• Demonstrate or recall of the installation of door installation	SL11-12.5	AC1
6.1.7 Identify the types of thresholds used with exterior doors.	• Describe the various materials that thresholds are made from and how they are constructed	L11-12.4	AC1
6.1.8 Install a pre-hung exterior door.	• Install a pre-hung exterior door	Click here to enter text.	AC1 AC6 AC2
6.1.9 Identify the various types of locksets used on exterior doors and explain how they are installed.	• Identify the various parts of a lock set • Demonstrate how to install locksets	L11-12.4	AC1
6.1.10 Install a lockset.	Install a lockset	Click here to enter text.	AC1 AC6 AC2

Common Core State Standards Grades 9-12

ELA Speaking and Listening Standards Grades 11-12

1. Initiate and participate effectively in a range of collaborative discussions (one-on-one, in groups, and teacher-led) with diverse partners on grades 11–12 topics, texts, and issues, building on others' ideas and expressing their own clearly and persuasively. **SL11-12.1**
    a. Come to discussions prepared, having read and researched material under study; explicitly draw on that preparation by referring to evidence from texts and other research on the topic or issue to stimulate a thoughtful, well-reasoned exchange of ideas. **SL11-12.1a**
    b. Work with peers to promote civil, democratic discussions and decision-making, set clear goals and deadlines, and establish individual roles as needed. **SL11-12.1b**
    c. Propel conversations by posing and responding to questions that probe reasoning and evidence; ensure a hearing for a full range of positions on a topic or issue; clarify, verify, or challenge ideas and conclusions; and promote divergent and creative perspectives. **SL11-12.1c**
    d. Respond thoughtfully to diverse perspectives; synthesize comments, claims, and evidence made on all sides of an issue; resolve contradictions when possible; and determine what additional information or research is required to deepen the investigation or complete the task. **SL11-12.1d**
2. Integrate multiple sources of information presented in diverse formats and media (e.g., visually, quantitatively, orally) in order to make informed decisions and solve problems, evaluating the credibility and accuracy of each source and noting any discrepancies among the data. **SL11-12.2**
3. Evaluate a speaker's point of view, reasoning, and use of evidence and rhetoric, assessing the stance, premises, links among ideas, word choice, points of emphasis, and tone used. **SL11-12.3**
4. Present information, findings, and supporting evidence, conveying a clear and distinct perspective, such that listeners can follow the line of reasoning, alternative or opposing perspectives are addressed, and the organization, development, substance, and style are appropriate to purpose, audience, and a range of formal and informal tasks. **SL11-12.4**
5. Make strategic use of digital media (e.g., textual, graphical, audio, visual, and interactive elements) in presentations to enhance understanding of findings, reasoning, and evidence and to add interest. **SL11-12.5**

ELA Language Grades 11-12

4. Determine or clarify the meaning of unknown and multiple-meaning words and phrases based on grades 11–12 reading and content, choosing flexibly from a range of strategies. **L11-12.4**
    a. Use context (e.g., the overall meaning of a sentence, paragraph, or text; a word's position or function in a sentence) as a clue to the meaning of a word or phrase. **L11-12.4a**
    b. Identify and correctly use patterns of word changes that indicate different meanings or parts of speech (e.g., conceive, conception, conceivable). **L11-12.4b**

c. Consult general and specialized reference materials (e.g., dictionaries, glossaries, thesauruses), both print and digital, to find the pronunciation of a word or determine or clarify its precise meaning, its part of speech, its etymology, or its standard usage. **L11-12.4c**

d. Verify the preliminary determination of the meaning of a word or phrase (e.g., by checking the inferred meaning in context or in a dictionary **L11-12.4d**

6. Acquire and use accurately general academic and domain-specific words and phrases, sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression. **L11-12.6**

Reading Standards for Literacy in Science and Technical Subjects Grades 11-12

1. Cite specific textual evidence to support analysis of science and technical texts, attending to important distinctions the author makes and to any gaps or inconsistencies in the account. **R11-12.1**
2. Determine the central ideas or conclusions of a text; summarize complex concepts, processes, or information presented in a text by paraphrasing them in simpler but still accurate terms. **R11-12.2**
3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks; analyze the specific results based on explanations in the text. **R11-12.3**
4. Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 11–12 texts and topics. **R11-12.4**
5. Analyze how the text structures information or ideas into categories or hierarchies, demonstrating understanding of the information or ideas. **R11-12.5**
6. Analyze the author's purpose in providing an explanation, describing a procedure, or discussing an experiment in a text, identifying important issues that remain unresolved. **R11-12.6**
7. Integrate and evaluate multiple sources of information presented in diverse formats and media (e.g., quantitative data, video, multimedia) in order to address a question or solve a problem. **R11-12.7**
8. Evaluate the hypotheses, data, analysis, and conclusions in a science or technical text, verifying the data when possible and corroborating or challenging conclusions with other sources of information. **R11-12.8**
9. Synthesize information from a range of sources (e.g., texts, experiments, simulations) into a coherent understanding of a process, phenomenon, or concept, resolving conflicting information when possible. **R11-12.9**
10. By the end of grade 12, read and comprehend science/technical texts in the grades 11–CCR text complexity band independently and proficiently. **R11-12.10**

Writing Standards for Literacy in History/Social Studies, Science, and Technical Subjects Grades 11-12

1. Write arguments focused on discipline-specific content. **W11-12.1**

a. Introduce precise, knowledgeable claim(s), establish the significance of the claim(s), distinguish the claim(s) from alternate or opposing claims, and create an organization that logically sequences the claim(s), counterclaims, reasons, and evidence. **W11-12.1a**
b. Develop claim(s) and counterclaims fairly and thoroughly, supplying the most relevant data and evidence for each while pointing out the strengths and limitations of both claim(s) and counterclaims in a discipline-appropriate form that anticipates the audience's knowledge level, concerns, values, and possible biases. **W11-12.1b**
c. Use words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim(s) and reasons, between reasons and evidence, and between claim(s) and counterclaims. **W11-12.1c**
d. Establish and maintain a formal style and objective tone while attending to the norms and conventions of the discipline in which they are writing. **W11-12.1d**
e. Provide a concluding statement or section that follows from or supports the argument presented. **W11-12.1e**

2. Write informative/explanatory texts, including the narration of historical events, scientific procedures/ experiments, or technical processes. **W11-12.2**
   a. Introduce a topic and organize complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; include formatting (e.g., headings), graphics (e.g., figures, tables), and multimedia when useful to aiding comprehension. **W11-12.2a**
   b. Develop the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic. **W11-12.2b**
   c. Use varied transitions and sentence structures to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts. **W11-12.2c**
   d. Use precise language, domain-specific vocabulary and techniques such as metaphor, simile, and analogy to manage the complexity of the topic; convey a knowledgeable stance in a style that responds to the discipline and context as well as to the expertise of likely readers. **W11-12.2d**
   e. Provide a concluding statement or section that follows from and supports the information or explanation provided (e.g., articulating implications or the significance of the topic). **W11-12.2e**
3. Write precise enough descriptions of the step-by-step procedures they use in their investigations or technical work that others can replicate them and (possibly) reach the same results. **W11-12.3**
4. Produce clear and coherent writing in which the development, organization, and style are appropriate to task, purpose, and audience.
   W11-12.4
5. Develop and strengthen writing as needed by planning, revising, editing, rewriting, or trying a new approach, focusing on addressing what is most significant for a specific purpose and audience. **W11-12.5**
6. Use technology, including the Internet, to produce, publish, and update individual or shared writing products in response to ongoing feedback, including new arguments or information. **W11-12.6**

7. Conduct short as well as more sustained research projects to answer a question (including a self-generated question) or solve a problem; narrow or broaden the inquiry when appropriate; synthesize multiple sources on the subject, demonstrating understanding of the subject under investigation. **W11-12.7**
8. Gather relevant information from multiple authoritative print and digital sources, using advanced searches effectively; assess the strengths and limitations of each source in terms of the specific task, purpose, and audience; integrate information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation. **W11-12.8**
9. Draw evidence from informational texts to support analysis, reflection, and research. **W11-12.9**
10. Write routinely over extended time frames (time for reflection and revision) and shorter time frames (a single sitting or a day or two) for a range of discipline-specific tasks, purposes, and audiences. **W11-12.10**

Common Career and Technical Core Standards

Architecture and Construction Career Cluster

Architecture and Construction Career Cluster Standards

1. Use vocabulary, symbols, and formulas common to architecture and construction. **AC1**
2. Use architecture and construction skills to create and manage a project. **AC2**
3. Comply with regulations and applicable codes to establish and manage a legal and safe workplace/jobsite. **AC3**
4. Evaluate the nature and scope of the Architecture and Construction Career Cluster and the role architecture and construction play in society and the economy. **AC4**
5. Describe the roles, responsibilities, and relationships found in the architecture and construction trades and professions, including labor/management relationships. **AC5**
6. Read, interpret, and use technical drawings, documents, and specifications to plan a project. **AC6**
7. Describe career opportunities and means to achieve those opportunities in each of the Architecture and Construction Career Pathways. **AC7**

Construction Career Pathway (AC-CST)

1. Describe contractual relationships between all parties involved in the building process. **AC-CST1**
2. Describe the approval procedures required for the successful completion of a construction project. **AC-CST2**
3. Implement testing and inspection procedures to ensure successful completion of the construction project. **AC-CST3**
4. Apply scheduling practices to ensure the successful completion of a construction project. **AC-CST4**
5. Apply practices and procedures required to maintain jobsite safety. **AC-CST5**
6. Manage relationships with internal and external parties to successfully complete construction projects. **AC-CST6**
7. Compare and contrast the building systems and components required for a construction project. **AC-CST7**
8. Demonstrate the construction crafts required for each phase of a construction project. **AC-CST8**

9. Safely use and maintain appropriate tools, machinery, equipment, and resources to accomplish construction project goals. **AC-CST9**

Common Career and Technical Core Career Ready Practices (CCTC CRP)

1. Act as a responsible and contributing citizen and employee. **CRP1**
2. Apply appropriate academic and technical skills. **CRP2**
3. Attend to personal health and financial well-being. **CRP3**
4. Communicate clearly, effectively, and with reason. **CRP4**
5. Consider the environmental, social and economic impacts of decisions. **CRP5**
6. Demonstrate creativity and innovation. **CRP6**
7. Employ valid and reliable research strategies. **CRP7**
8. Utilize critical thinking to make sense of problems and persevere in solving them. **CRP8**
9. Model integrity, ethical leadership, and effective management. **CRP9**
10. Plan education and career path aligned to personal goals.**CRP10**
11. Use technology to enhance productivity. **CRP11**
12. Work productively in teams while using cultural/global competence. **CRP12**